

## Author index

- Ahmad, T. 309  
Albrecht, B. 289  
Angelino, N.J. 99
- Bacon, B.E. 365  
Bandgar, B.P. 337  
Barrows, S.E. 219  
Bartolucci, C. 401  
Bernacki, R.J. 99  
Berthault, P. 267  
Besra, G.S. 449  
Braccini, I. 1, 167  
Brennan, P.J. 449  
Brown, S.E. 183
- Cancio, M.J. 209  
Cellai, L. 401  
Chen, J. 443  
Cherniak, R. 365  
Clochard, M. 167  
Colombo, D. 437  
Cramer, C.J. 219
- De Lederkremer, R.M. 209  
Dell, A. 449  
Desvaux, H. 267  
Dodson-Simmons, O. 99  
Duchesne, D. 267  
Dulles, F.J. 219
- Engelsen, S.B. 1
- Falshaw, R. 155  
Field, R.A. 347  
French, A.D. 219  
Fu, W. 347  
Furneaux, R.H. 155, 387
- Gage, D.A. 167  
Gilquin, B. 267
- Goldberg, R. 167  
Griffin, C.C. 183
- Haas, H. 117, 137  
Hatano, K. 409  
Helland, A.-C. 91  
Hervé du Penhoat, C. 1, 167  
Hileman, R.E. 183  
Hindsgaul, O. 91, 347  
Huang, Z.-H. 167
- Iannelli, M.A. 401  
Ismail, A.A. 253
- Jarvis, M.C. 167
- Kamerling, J.P. 117, 137  
Kaneko, Y. 425  
Kanie, O. 409  
Kenne, L. 309  
Khoo, K.-H. 449  
Koca, J. 1  
Korytnyk, W. 99
- Lamba, D. 401  
Larsen, N.G. 387  
Lee, Y.C. 31  
Lehmann, J. 43, 57, 199, 215  
Leigh, D.A. 417  
Linhardt, R.J. 183  
Liverani, L. 401
- Macher, B.A. 91  
Marino, C. 209  
Mascellani, G. 401  
Matsuno, T. 75  
Matsuoka, K. 31  
Michon, V. 167  
Mimura, T. 425  
Morgan, K.R. 387  
Morris, H.R. 449

- Nakashima, H. 425  
Nishimura, S.-I. 31
- Olsson, K. 309  
Otter, A. 347
- Palcic, M.M. 91  
Panza, L. 437  
Patil, S.V. 337  
Pérez, S. 1  
Perola, E. 401  
Pütz, U. 289
- Reck, F. 321  
Rob, B. 199  
Robijn, G.W. 117, 137  
Ronchetti, F. 437
- Scheuring, M. 57  
Schmidt-Schuchardt, M. 43  
Schubert II, R.L. 183  
Schwarzmänn, G. 289  
Sharma, M. 99  
Shitara, T. 75  
Smart, J.P. 417  
Stults, C.L.M. 91  
Suzuki, R. 449
- Takeda, T. 409  
Theander, O. 309  
Thomas, J.R. 137  
Toida, T. 183  
Truhlar, D.G. 219  
Truscello, A.M. 417  
Tsuchiya, T. 75
- Umemura, E. 75  
Uryu, T. 425
- Van den Berg, D.J.C. 117, 137  
Van Gorp, C.L. 183  
Varela, O. 209  
Vliegthart, J.F.G. 117, 137
- Wagenknecht, H.-A. 215
- Yamamoto, N. 425  
Yang, L. 443  
Yasuda, Y. 425  
Yaylayan, V.A. 253  
Yoshida, T. 425
- Zbiral, E. 337  
Zhang, L. 443

## Subject index

### 2-Acetamido-2-deoxy-D-galactose

The  $\beta$ -D-GalpNAc-(1  $\rightarrow$  3)-D-Galp linkage through the oxazoline glycosylation method 437

### N-Acetylglucosaminyltransferases I and II

Synthesis of uridine-5-propylamine derivatives and their use in affinity chromatography of N-acetylglucosaminyltransferases I and II 321

### N-Acetylglucosamine

Synthesis and  $^1\text{H}$  NMR characterization of the six isomeric mono-O-sulfates of 8-methoxycarbonyloct-1-yl O- $\beta$ -D-galactopyranosyl-(1  $\rightarrow$  4)-2-acetamido-2-deoxy- $\beta$ -D-glucopyranoside 347

### Affinity chromatography

Synthesis of uridine-5-propylamine derivatives and their use in affinity chromatography of N-acetylglucosaminyltransferases I and II 321

### Aglycon transfer

Intermolecular aglycon transfer of ethyl 1-thiorhamnopiranosides under Koenigs–Knorr and Helferich glycosylation conditions 417

### AIDS viruses

Synthesis of curdlan sulfates having inhibitory effects in vitro against AIDS viruses HIV-1 and HIV-2 425

### Alpha-amylase

Spacer-modified oligosaccharides with basic anchoring groups are inhibitors for endoglycanases: porcine pancreatic alpha-amylase as model enzyme 43

### Amikacin

Synthesis of 5-deoxy-5-epifluoro derivatives of arbekacin, amikacin, and 1-N-[(S)-4-amino-2-hydroxybutanoyl]tobramycin (study on structure — toxicity relationships) 75

### 1-N-[(S)-4-Amino-2-hydroxybutanoyl]tobramycin

Synthesis of 5-deoxy-5-epifluoro derivatives of arbekacin, amikacin, and 1-N-[(S)-4-amino-2-hydroxybutanoyl]tobramycin (study on structure — toxicity relationships) 75

### Anticoagulant activity

Inhibition of human leukocyte elastase by chemically and naturally oversulfated galactosaminoglycans 401

### Antileukemia testing, in vivo

Versatile intermediates in the selective modification of the amino function of 2-amino-2-deoxy-D-mannopyranose and the 3-position of 2-acetamido-2-deoxy-D-mannose: potential membrane modifiers in neoplastic control 99

### Arbekacin

Synthesis of 5-deoxy-5-epifluoro derivatives of arbekacin, amikacin, and 1-N-[(S)-4-amino-2-hydroxybutanoyl]tobramycin (study on structure — toxicity relationships) 75

### Auricularia auricula-judae

Conformational change of the  $\beta$ -D-glucan of *Auricularia auricula-judae* in water–dimethyl sulfoxide mixtures 443

### Basic substrate analogues

Spacer-modified oligosaccharides with basic anchoring groups are inhibitors for endoglycanases: porcine pancreatic alpha-amylase as model enzyme 43

### Bi-fluorescence-labeled lactoside

A bi-fluorescence-labeled substrate for ceramide glycanase based on fluorescence energy transfer 31

### Carrageenan

Carrageenans from the tetrasporic stages of *Gigartina clavifera* and *Gigartina alveata* (Gigartinales, Rhodophyta) 155

### Cationic anchoring group

Spacer-modified oligosaccharides with basic anchoring groups are inhibitors for endoglycanases: porcine pancreatic alpha-amylase as model enzyme 43

- <sup>13</sup>C CP/MAS NMR spectroscopy  
Solid-state NMR studies on the structure of starch granules 387
- Cellulase  
Structural analysis of cyclamen seed xyloglucan oligosaccharides using cellulase digestion and spectroscopic methods 167
- Ceramide glycanase  
A bi-fluorescence-labeled substrate for ceramide glycanase based on fluorescence energy transfer 31
- Chair  
Relative stability of alternative chair forms and hydroxymethyl conformations of  $\beta$ -D-glucopyranose 219
- Chondroitin sulfate  
Inhibition of human leukocyte elastase by chemically and naturally oversulfated galactosaminoglycans 401
- Competitive inhibition  
Spacer-modified oligosaccharides with basic anchoring groups are inhibitors for endoglycanases: porcine pancreatic  $\alpha$ -amylase as model enzyme 43  
Enzymic glycosylation of  $(\pm)$ -(3,5/4,6)-3,6-diazido-4,5-dihydroxycyclohexene. A way to prepare stereochemically pure and enzyme resistant, basic pseudo-disaccharides as competitive enzyme inhibitors 199  
Support of a cyclic versus acyclic intermediate in enzymatic glycoside cleavage: 1,3-(*R*)-*O*-benzylidene-D-threitol is a competitive inhibitor but not a substrate of  $\beta$ -D-galactosidase 215
- Conformational analysis  
Relative stability of alternative chair forms and hydroxymethyl conformations of  $\beta$ -D-glucopyranose 219
- Conformational change  
Conformational change of the  $\beta$ -D-glucan of *Auricularia auricula-judae* in water-dimethyl sulfoxide mixtures 443
- Conformational search  
Travelling on the potential energy surfaces of carbohydrates: comparative application of an exhaustive systematic conformational search with an heuristic search 1
- CP-MAS <sup>13</sup>C NMR  
Structural analysis of cyclamen seed xyloglucan oligosaccharides using cellulase digestion and spectroscopic methods 167
- Curdlan sulfates  
Synthesis of curdlan sulfates having inhibitory effects in vitro against AIDS viruses HIV-1 and HIV-2 425
- Cyclic acetals  
Support of a cyclic versus acyclic intermediate in enzymatic glycoside cleavage: 1,3-(*R*)-*O*-benzylidene-D-threitol is a competitive inhibitor but not a substrate of  $\beta$ -D-galactosidase 215
- Cyclodextrin  
A self-included cyclomaltoheptaose derivative studied by NMR spectroscopy and molecular modelling 267
- Dermatan sulfate  
Inhibition of human leukocyte elastase by chemically and naturally oversulfated galactosaminoglycans 401
- Diazirines  
Mono-, di- and tri-antennary D-galactose ligands as competitive inhibitors and photoaffinity labels of the hexose transporting system in erythrocytes. A model for the irreversible blocking of receptors in cell membranes 57
- E.C. 2.4.1.151  
Methyl 3-amino-3-deoxy- $\beta$ -D-galactopyranosyl-(1  $\rightarrow$  4)-2-acetamido-2-deoxy- $\beta$ -D-glucopyranoside: an inhibitor of UDP-D-galactose: $\beta$ -D-galactopyranosyl-(1  $\rightarrow$  4)-2-acetamido-2-deoxy-D-glucose (1  $\rightarrow$  3)- $\alpha$ -D-galactopyranosyltransferase 91
- Elastase inhibition  
Inhibition of human leukocyte elastase by chemically and naturally oversulfated galactosaminoglycans 401
- Enolization  
Investigation of the enolization and carbonyl group migration in reducing sugars by FTIR spectroscopy 253
- Enzyme inhibitor  
Methyl 3-amino-3-deoxy- $\beta$ -D-galactopyranosyl-(1  $\rightarrow$  4)-2-acetamido-2-deoxy- $\beta$ -D-glucopyranoside: an inhibitor of UDP-D-galactose: $\beta$ -D-galactopyranosyl-(1  $\rightarrow$  4)-2-acetamido-2-deoxy-D-glucose (1  $\rightarrow$  3)- $\alpha$ -D-galactopyranosyltransferase 91
- Erythrocytes  
Mono-, di- and tri-antennary D-galactose ligands as competitive inhibitors and photoaffinity labels of the hexose transporting system in erythrocytes. A model for the irreversible blocking of receptors in cell membranes 57
- Ethyl  $\beta$ -lactoside  
Travelling on the potential energy surfaces of carbohydrates: comparative application of an exhaustive systematic conformational search with an heuristic search 1
- Exopolysaccharide structure  
The structure of the exopolysaccharide produced by *Lactobacillus helveticus* 766 137



- Fluorescence energy transfer**  
A bi-fluorescence-labeled substrate for ceramide glycanase based on fluorescence energy transfer 31
- Fluorogenic substrate**  
Synthesis of 4-methylcoumarin-7-yl  $\beta$ -D-galactofuranoside, a fluorogenic substrate for galactofuranosidase 209
- Formic acid**  
The formation of 2-furaldehyde and formic acid from pentoses in slightly acidic deuterium oxide studied by  $^1\text{H}$  NMR spectroscopy 309
- FTIR spectroscopy**  
Investigation of the enolization and carbonyl group migration in reducing sugars by FTIR spectroscopy 253
- 2-Furaldehyde**  
The formation of 2-furaldehyde and formic acid from pentoses in slightly acidic deuterium oxide studied by  $^1\text{H}$  NMR spectroscopy 309
- Galactan, sulfated**  
Carrageenans from the tetrasporic stages of *Gigartina clavifera* and *Gigartina alveata* (Gigartineae, Rhodophyta) 155
- Galactofuranosidase**  
Synthesis of 4-methylcoumarin-7-yl  $\beta$ -D-galactofuranoside, a fluorogenic substrate for galactofuranosidase 209
- $\beta$ -D-Galactosidase**  
Enzymic glycosylation of  $(\pm)$ -(3,5/4,6)-3,6-diazido-4,5-dihydroxycyclohexene. A way to prepare stereochemically pure and enzyme resistant, basic pseudo-disaccharides as competitive enzyme inhibitors 199
- $\alpha$ -(1  $\rightarrow$  3)-Galactosyltransferase**  
Methyl 3-amino-3-deoxy- $\beta$ -D-galactopyranosyl-(1  $\rightarrow$  4)-2-acetamido-2-deoxy- $\beta$ -D-glucopyranoside: an inhibitor of UDP-D-galactose: $\beta$ -D-galactopyranosyl-(1  $\rightarrow$  4)-2-acetamido-2-deoxy-D-glucose (1  $\rightarrow$  3)- $\alpha$ -D-galactopyranosyltransferase 91
- Gigartina alveata***  
Carrageenans from the tetrasporic stages of *Gigartina clavifera* and *Gigartina alveata* (Gigartineae, Rhodophyta) 155
- Gigartina clavifera***  
Carrageenans from the tetrasporic stages of *Gigartina clavifera* and *Gigartina alveata* (Gigartineae, Rhodophyta) 155
- Globo-H**  
The  $\beta$ -D-Gal pNAc-(1  $\rightarrow$  3)-D-Gal p linkage through the oxazoline glycosylation method 437
- $\beta$ -D-Glucan**  
Conformational change of the  $\beta$ -D-glucan of *Auricularia auricula-judae* in water-dimethyl sulfoxide mixtures 443
- Glucose**  
Relative stability of alternative chair forms and hydroxymethyl conformations of  $\beta$ -D-glucopyranose 219
- Glucosylthioceramide**  
Synthesis of fluorescent and radioactive analogues of two lactosylceramides and glucosylceramide containing  $\beta$ -thioglycosidic bonds that are resistant to enzymatic degradation 289
- Glycolipids, labeled**  
Synthesis of fluorescent and radioactive analogues of two lactosylceramides and glucosylceramide containing  $\beta$ -thioglycosidic bonds that are resistant to enzymatic degradation 289
- Glycopeptidolipids**  
Structural definition of the glycopeptidolipids and the pyruvylated, glycosylated acyltrehalose from *Mycobacterium butyricum* 449
- Glycosidases**  
Support of a cyclic versus acyclic intermediate in enzymatic glycoside cleavage: 1,3-(*R*)-O-benzylidene-D-threitol is a competitive inhibitor but not a substrate of  $\beta$ -D-galactosidase 215
- Glycoside cleavage**  
Support of a cyclic versus acyclic intermediate in enzymatic glycoside cleavage: 1,3-(*R*)-O-benzylidene-D-threitol is a competitive inhibitor but not a substrate of  $\beta$ -D-galactosidase 215
- Glycosylation**  
Intermolecular aglycon transfer of ethyl 1-thiorhamnopyranosides under Koenigs-Knorr and Helferich glycosylation conditions 417  
The  $\beta$ -D-Gal pNAc-(1  $\rightarrow$  3)-D-Gal p linkage through the oxazoline glycosylation method 437
- $^1\text{H}$  and  $^{13}\text{C}$  NMR**  
A self-included cyclomaltoheptaose derivative studied by NMR spectroscopy and molecular modelling 267
- Helferich**  
Intermolecular aglycon transfer of ethyl 1-thiorhamnopyranosides under Koenigs-Knorr and Helferich glycosylation conditions 417
- Heparan sulfate**  
Isolation and characterization of heparan sulfate from crude porcine intestinal mucosal peptidoglycan heparin 183
- Heparin**  
Isolation and characterization of heparan sulfate from crude porcine intestinal mucosal peptidoglycan heparin 183

## Hexose transport system

Mono-, di- and tri-antennary D-galactose ligands as competitive inhibitors and photoaffinity labels of the hexose transporting system in erythrocytes. A model for the irreversible blocking of receptors in cell membranes 57

<sup>1</sup>H NMR

Synthesis and <sup>1</sup>H NMR characterization of the six isomeric mono-O-sulfates of 8-methoxycarbonyloct-1-yl O-β-D-galactopyranosyl-(1 → 4)-2-acetamido-2-deoxy-β-D-glucopyranoside 347

## Intramolecular complex

A self-included cyclomaltoheptaose derivative studied by NMR spectroscopy and molecular modelling 267

## Irreversible blocking

Mono-, di- and tri-antennary D-galactose ligands as competitive inhibitors and photoaffinity labels of the hexose transporting system in erythrocytes. A model for the irreversible blocking of receptors in cell membranes 57

## Koenigs-Knorr

Intermolecular aglycon transfer of ethyl 1-thiorhamnopyranosides under Koenigs-Knorr and Helferich glycosylation conditions 417

## Lactic acid bacteria

Determination of the structure of the exopolysaccharide produced by *Lactobacillus sake* 0-1 117

The structure of the exopolysaccharide produced by *Lactobacillus helveticus* 766 137

*Lactobacillus helveticus*

The structure of the exopolysaccharide produced by *Lactobacillus helveticus* 766 137

*Lactobacillus sake*

Determination of the structure of the exopolysaccharide produced by *Lactobacillus sake* 0-1 117

## Lactosylthioceramide

Synthesis of fluorescent and radioactive analogues of two lactosylceramides and glucosylceramide containing β-thioglycosidic bonds that are resistant to enzymatic degradation 289

## β-Linkage

The β-D-GalpNAc-(1 → 3)-D-Galp linkage through the oxazoline glycosylation method 437

## Mannopyranoside

Molecular and crystal structure of methyl 2,3,4-tri-O-acetyl-β-D-xylopyranosyl-(1 → 2)-3-O-

benzyl-4,6-O-benzylidene-α-D-mannopyranoside 409

## D-Mannose, 2-acetamido-2-deoxy

Versatile intermediates in the selective modification of the amino function of 2-amino-2-deoxy-D-mannopyranose and the 3-position of 2-acetamido-2-deoxy-D-mannose: potential membrane modifiers in neoplastic control 99

## D-Mannose, 2-amino-2-deoxy-

Versatile intermediates in the selective modification of the amino function of 2-amino-2-deoxy-D-mannopyranose and the 3-position of 2-acetamido-2-deoxy-D-mannose: potential membrane modifiers in neoplastic control 99

## Membrane modifiers

Versatile intermediates in the selective modification of the amino function of 2-amino-2-deoxy-D-mannopyranose and the 3-position of 2-acetamido-2-deoxy-D-mannose: potential membrane modifiers in neoplastic control 99

## Membrane proteins

Mono-, di- and tri-antennary D-galactose ligands as competitive inhibitors and photoaffinity labels of the hexose transporting system in erythrocytes. A model for the irreversible blocking of receptors in cell membranes 57

## Methyl α-D-galactoside

Travelling on the potential energy surfaces of carbohydrates: comparative application of an exhaustive systematic conformational search with an heuristic search 1

## Methyl 3-amino-3-deoxy-β-D-galactopyranosyl-(1 → 4)-2-acetamido-2-deoxy-β-D-glucopyranoside

Methyl 3-amino-3-deoxy-β-D-galactopyranosyl-(1 → 4)-2-acetamido-2-deoxy-β-D-glucopyranoside: an inhibitor of UDP-D-galactose:β-D-galactopyranosyl-(1 → 4)-2-acetamido-2-deoxy-D-glucose (1 → 3)-α-D-galactopyranosyltransferase 91

## Methyl β-D-galactoside

Travelling on the potential energy surfaces of carbohydrates: comparative application of an exhaustive systematic conformational search with an heuristic search 1

## 4-Methylcoumarin-7-yl β-D-galactofuranoside

Synthesis of 4-methylcoumarin-7-yl β-D-galactofuranoside, a fluorogenic substrate for galactofuranosidase 209

## MM3

Relative stability of alternative chair forms and hydroxymethyl conformations of β-D-glucopyranose 219

## Molecular dynamics

A self-included cyclomaltoheptaose derivative studied by NMR spectroscopy and molecular modelling 267

## Molecular mechanics

Travelling on the potential energy surfaces of carbohydrates: comparative application of an exhaustive systematic conformational search with an heuristic search 1

## Molecular modeling

Relative stability of alternative chair forms and hydroxymethyl conformations of  $\beta$ -D-glucopyranose 219

## Molecular orbital theory

Relative stability of alternative chair forms and hydroxymethyl conformations of  $\beta$ -D-glucopyranose 219

*Mycobacterium butyricum*

Structural definition of the glycopeptidolipids and the pyruvylated, glycosylated acyltrehalose from *Mycobacterium butyricum* 449

4-*epi*-Neuraminic acid, 4-acetamido-*N*-acetyl-4-deoxy-

Synthesis of methyl 4-acetamido-*N*-acetyl-4-deoxy- $\alpha$ - and  $\beta$ -4-*epi*-neuraminic acids 337

Neuraminic acid, *N*-acetyl-

Synthesis of methyl 4-acetamido-*N*-acetyl-4-deoxy- $\alpha$ - and  $\beta$ -4-*epi*-neuraminic acids 337

## NMR

Travelling on the potential energy surfaces of carbohydrates: comparative application of an exhaustive systematic conformational search with an heuristic search 1

## nOe restraints

A self-included cyclomaltoheptaose derivative studied by NMR spectroscopy and molecular modelling 267

## Optical rotation

Travelling on the potential energy surfaces of carbohydrates: comparative application of an exhaustive systematic conformational search with an heuristic search 1

## Oversulfated galactosaminoglycans

Inhibition of human leukocyte elastase by chemically and naturally oversulfated galactosaminoglycans 401

## Oxazoline

The  $\beta$ -D-Gal pNAc-(1  $\rightarrow$  3)-D-Gal p linkage through the oxazoline glycosylation method 437

## Pentose

The formation of 2-furaldehyde and formic acid from pentoses in slightly acidic deuterium oxide studied by  $^1\text{H}$  NMR spectroscopy 309

## Peptidoglycan

Isolation and characterization of heparan sulfate from crude porcine intestinal mucosal peptidoglycan heparin 183

## Phosphoglycerol

Determination of the structure of the exopolysaccharide produced by *Lactobacillus sake* 0-1 117

## Photoaffinity labelling

Mono-, di- and tri-antennary D-galactose ligands as competitive inhibitors and photoaffinity labels of the hexose transporting system in erythrocytes. A model for the irreversible blocking of receptors in cell membranes 57

## Polysaccharide

Determination of the structure of the exopolysaccharide produced by *Lactobacillus sake* 0-1 117

## Pseudo-disaccharides

Enzymic glycosylation of ( $\pm$ )-(3,5/4,6)-3,6-diazido-4,5-dihydroxycyclohexene. A way to prepare stereochemically pure and enzyme resistant, basic pseudo-disaccharides as competitive enzyme inhibitors 199

## Pyruvylated, glycosylated acyltrehalose

Structural definition of the glycopeptidolipids and the pyruvylated, glycosylated acyltrehalose from *Mycobacterium butyricum* 449

## Quantum mechanics

Relative stability of alternative chair forms and hydroxymethyl conformations of  $\beta$ -D-glucopyranose 219

## Radiolabelling

Mono-, di- and tri-antennary D-galactose ligands as competitive inhibitors and photoaffinity labels of the hexose transporting system in erythrocytes. A model for the irreversible blocking of receptors in cell membranes 57

## Rhamnopyranosides

Intermolecular aglycon transfer of ethyl 1-thiorhamnopyranosides under Koenigs-Knorr and Helferich glycosylation conditions 417

## Ring currents

A self-included cyclomaltoheptaose derivative studied by NMR spectroscopy and molecular modelling 267

## Ring puckering

Relative stability of alternative chair forms and hydroxymethyl conformations of  $\beta$ -D-glucopyranose 219

## Self-inclusion

A self-included cyclomaltoheptaose derivative studied by NMR spectroscopy and molecular modelling 267

## Sialic acid

Versatile intermediates in the selective modification of the amino function of 2-amino-2-de-



- oxy-D-mannopyranose and the 3-position of 2-acetamido-2-deoxy-D-mannose: potential membrane modifiers in neoplastic control 99
- Simulation in waterbox  
A self-included cyclomaltoheptaose derivative studied by NMR spectroscopy and molecular modelling 267
- Solvation  
Relative stability of alternative chair forms and hydroxymethyl conformations of  $\beta$ -D-glucopyranose 219
- Spacer-modified oligosaccharide  
Spacer-modified oligosaccharides with basic anchoring groups are inhibitors for endoglycanases: porcine pancreatic  $\alpha$ -amylase as model enzyme 43
- Starch granules  
Solid-state NMR studies on the structure of starch granules 387
- Stereospecific glycosylation  
Enzymic glycosylation of  $(\pm)$ -(3,5/4,6)-3,6-diazido-4,5-dihydroxycyclohexene. A way to prepare stereochemically pure and enzyme resistant, basic pseudo-disaccharides as competitive enzyme inhibitors 199
- Structural analysis  
Determination of the structure of the exopolysaccharide produced by *Lactobacillus sake* 0-1 117  
Structural definition of the glycopeptidolipids and the pyruvylated, glycosylated acyltrehalose from *Mycobacterium butyricum* 449
- Structure, solid-state  
Solid-state NMR studies on the structure of starch granules 387
- Sugars, carbonyl  
Investigation of the enolization and carbonyl group migration in reducing sugars by FTIR spectroscopy 253
- Sugars, enediol forms  
Investigation of the enolization and carbonyl group migration in reducing sugars by FTIR spectroscopy 253
- Sugars, reducing  
Investigation of the enolization and carbonyl group migration in reducing sugars by FTIR spectroscopy 253
- Sulfated oligosaccharides  
Synthesis and  $^1\text{H}$  NMR characterization of the six isomeric mono-O-sulfates of 8-methoxycarbonyloct-1-yl O- $\beta$ -D-galactopyranosyl-(1  $\rightarrow$  4)-2-acetamido-2-deoxy- $\beta$ -D-glucopyranoside 347
- Sulfation  
Inhibition of human leukocyte elastase by chemically and naturally oversulfated galactosaminoglycans 401
- Thioglycolipids  
Synthesis of fluorescent and radioactive analogues of two lactosylceramides and glucosylceramide containing  $\beta$ -thioglycosidic bonds that are resistant to enzymatic degradation 289
- Thioglycoside  
Intermolecular aglycon transfer of ethyl 1-thiorhamnopyranosides under Koenigs-Knorr and Helferich glycosylation conditions 417
- Thioglycosides  
Synthesis of fluorescent and radioactive analogues of two lactosylceramides and glucosylceramide containing  $\beta$ -thioglycosidic bonds that are resistant to enzymatic degradation 289
- UDP-D-Galactose:  $\beta$ -D-galactopyranosyl-(1  $\rightarrow$  4)-2-acetamido-2-deoxy-D-glucose (1  $\rightarrow$  3)- $\alpha$ -D-galactopyranosyltransferase  
Methyl 3-amino-3-deoxy- $\beta$ -D-galactopyranosyl-(1  $\rightarrow$  4)-2-acetamido-2-deoxy- $\beta$ -D-glucopyranoside: an inhibitor of UDP-D-galactose:  $\beta$ -D-galactopyranosyl-(1  $\rightarrow$  4)-2-acetamido-2-deoxy-D-glucose (1  $\rightarrow$  3)- $\alpha$ -D-galactopyranosyltransferase 91
- Uridine-5-propylamine derivatives  
Synthesis of uridine-5-propylamine derivatives and their use in affinity chromatography of N-acetylglucosaminyltransferases I and II 321
- X-ray crystal structure  
Molecular and crystal structure of methyl 2,3,4-tri-O-acetyl- $\beta$ -D-xylopyranosyl-(1  $\rightarrow$  2)-3-O-benzyl-4,6-O-benzylidene- $\alpha$ -D-mannopyranoside 409
- Xyloglucan  
Structural analysis of cyclamen seed xyloglucan oligosaccharides using cellulase digestion and spectroscopic methods 167
- Xylopyranoside  
Molecular and crystal structure of methyl 2,3,4-tri-O-acetyl- $\beta$ -D-xylopyranosyl-(1  $\rightarrow$  2)-3-O-benzyl-4,6-O-benzylidene- $\alpha$ -D-mannopyranoside 409
- Xylosyl  
Molecular and crystal structure of methyl 2,3,4-tri-O-acetyl- $\beta$ -D-xylopyranosyl-(1  $\rightarrow$  2)-3-O-benzyl-4,6-O-benzylidene- $\alpha$ -D-mannopyranoside 409